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**Carlson**

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(54) **USER ASSISTANCE SYSTEM COMPRISING  
A CLEANING AND DISINFECTING DEVICE**

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(58) **Field of Classification Search**  
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See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

7,726,564 B2 6/2010 Goldbach  
2002/0161460 A1\* 10/2002 Noguchi ..... A61B 1/00059  
700/90  
2013/0278631 A1\* 10/2013 Border ..... G02B 27/017  
345/633

**FOREIGN PATENT DOCUMENTS**

DE 19703822 A1 6/1998  
EP 1952779 A1 8/2008

(Continued)

**OTHER PUBLICATIONS**

International Search Report dated Feb. 11, 2016 issued in PCT/  
EP2015/069123.

(Continued)

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(57) **ABSTRACT**

A user assistance system for use with a device for cleaning and disinfecting a surgical instrument. The system including data eyeglasses including a camera and a projection surface, wherein the data eyeglasses projects information on the projection surface, a data storage in which a plurality of data sets on different types of surgical instruments are saved, information relating to an identifying feature of a particular type of surgical instrument and visual data relating to instructions on cleaning the particular type or surgical instrument are in each data set, and a controller configured to capture an image of a surgical instrument to be cleaned, compare image data with the identifying feature in the data sets, identify a type of the surgical instrument to be cleaned using the identifying feature in the image, and display visual information relating to instructions on cleaning the identified type of surgical instrument on the projection surface.

**17 Claims, 1 Drawing Sheet**

